

**First record of water mite subfamily Aturinae Thor 1900  
from China with description of a new species  
(Acari: Hygrobatoidae, Aturidae)**

JIN Dao-chao

(Institute of Entomology, Guizhou University, Guiyang 550025, China)

**Abstract:** A species of Aturinae, Aturidae, from Nei Mongol Autonomous Region is described as new to science: *Aturus hexgonus* sp. nov.. It is the first record of the subfamily Aturinae from China. The location patterns of glandularia and ocularia in the new species are described and illustrated in details.

**Key words:** Aturinae; *Aturus*; new species; water mite

The family Aturidae contains six subfamilies in the present subfamily classification<sup>[1,2]</sup>, of which two, Albinae Viets 1925 and Axonopsinae Viets 1929, were recorded from Hubei, China<sup>[3]</sup>. This paper adds the number of known subfamilies of the group from China to three with description of a new species from Zhalantun, Nei Mongol Autonomous Region. The location patterns of glandularia and ocularia of the new species are described and illustrated in details. Type specimens are deposited in the Institute of Entomology, Guizhou University. Measurements in the text are given in  $\mu\text{m}$  and the abbreviations used follow Jin<sup>[3]</sup>.

**Subfamily Aturinae Thor 1900**

New to China, diagnosis as given by Cook 1974, but dorsal shield containing the anal pore region extending up onto dorsal side.

**Genus *Aturus* Kramer 1875**

New to China, diagnosis sensus Cook 1974, characteristic glandularia of the genus as given in the present paper.

***Aturus hexgonus* sp. nov. (Figs. 1~11)**

Male: idiosoma shaped hexagon-like, 358 in length, 274 in width. Dorsal furrow ending in medial genital field, length of dorsal shield 315, width 248, the median area concave and the region of anal pore turning down from D4. A1 to anal pore 322. Ventral shield 444 in length includ-

Foundation item: The study was supported by the National Natural Science Foundation of China (30070103) and Provincial Science Foundation of Guizhou (97-A-4-1)

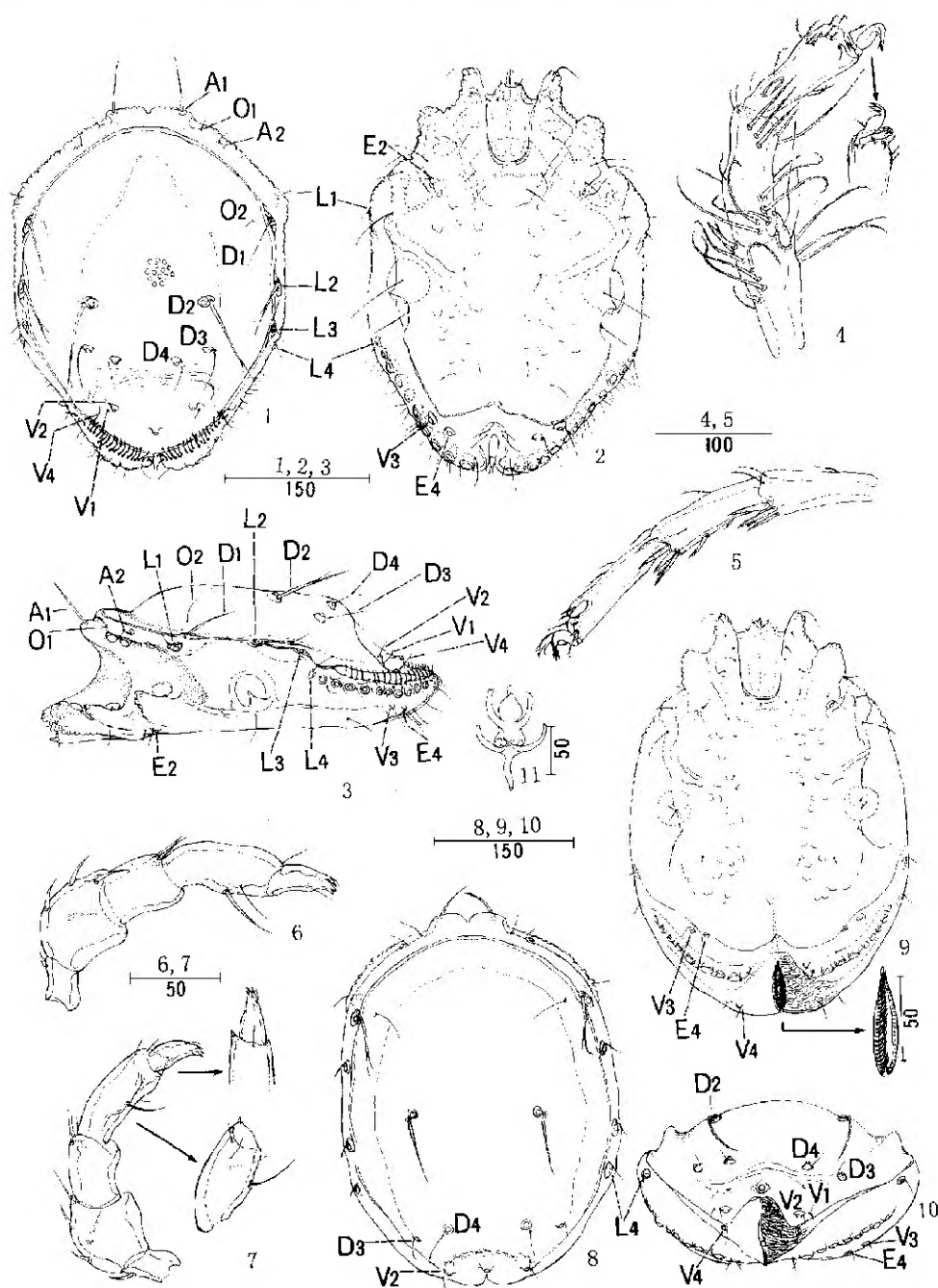
Received: 1998-03-02; accepted: 1998-05-13

ing anterior end of Ep I, posterior end with a deep median cleft at where gonopore located. A1 on well developed humps of anterior end of ventral shield. The dorso-lateral region bearing eye, O1, A1 and L1 expanded as a lateral ridge on each side of ventral shield when viewed laterally (Fig.3). On the ridge O1 and A2 located dorso-laterally, eye and L1 ventero-laterally. The setae of D2 and L2 bifurcate. Anterior end of Ep I to posterior end of EpIV 346. EpIV width 220 at insertion opening of IV leg. Length of Ib 95, width 43. The end of Ib to the median cleft 265. Genital field extended upward dorsally with more than 8 pairs of acetabula. Approximately 20 thickened and curved setae present on the dorsal border of the genital field close to the dorsal furrow. Infracapitulum 93 in length including anchoral process. Chelecera 86 in length. Lengths of palal segments: P-I 23, P-II 48, P-III 38, P-IV 60, P-V 30. The venter end of P-II expanded but without projection. P-IV venter enlarged, the anterior dorso-lateral end with a small projection bearing a small peg-like seta. Lengths of distal segments of I leg: I-L-3 50, I-L-4 68, I-L-5 81, I-L-6 93. Lengths of distal segments of IV leg: IV-L-3 93, IV-L-4 103, IV-L-5 115, IV-L-6 107. Claws trifurcate. Setae on legs with small branches except 2 modified heavy setae of the ventral terminal of IV-L-4 as illustrated in Fig.4.

Female: idiosoma 441 in length, 339 in width at L3. Dorsal furrow complete. Length of dorsal shield 315, width 248, the area along by the dorsal furrow protruded to form a elliptical convexity. The region of anal pore convex. A1 to anal pore 425. Ventral shield 477 in length including anterior end of Ep I, gonopore terminally located as a median cleft. A1 on well developed humps of anterior end of ventral shield. The region bearing eye, O1, A2 and L1 not as expanded laterally as male. D1 setae bifurcate. Anterior end of Ep I to posterior end of EpIV 398. EpIV width 229 at insertion opening of IV leg. Length of I b 103, width 48. The end of I b to gonopore 317. Genital field with about 8 acetabula. The integument around gonopore membranous and streaky, and nomenclature slightly thickened and curved setae on the edge of ventral opening of gonopore. Infracapitulum 105 in length including anchoral process. Chelecera 91 in length. Palp similar to male, lengths of the segments: P-I 24, P-II 50, P-III 35, P-IV 64, P-V 32. Lengths of distal segments of I leg: I-L-3 50, I-L-4 59, I-L-5 68, I-L-6 84. Lengths of distal segments of IV leg: IV-L-3 78, IV-L-4 90, IV-L-5 109, IV-L-6 118. Claws trifurcate.

Location of glandularium: The locations of 16 pairs of glandularia in male and female well illustrated in Figs.1~3 and 8~10 separately. Comparing with those in other groups<sup>[3]</sup>, dorso- and latero- and venteroglandularia are of characteristics in new species. D1 located in the dorsal furrow. D2, D3 and D4 close to one another in male and arranged in the shape of triangle in female. L1 located antero-laterally to D1. L2 and L3 lying in the dorsal furrow and posterior to D1. L4 laterally on the anterior end of genital field. V1 and V2 nearly fused and located laterally and anterior or posterior to anal pore. V3 on the venter and close to the latero-posterior end of EpIV. In male, V4 on the dorso-anterior border of genital, close to the dorsal furrow and latero-posterior to V1, but in female, it in the dorsal furrow and close to the posterior end, at where V2 located, of the dorsal shield.

Holotype ♂ (slide 468-1), 28. VIII. 1996, Woniu River (N48°1', E122°7'), Zhalantun,



Figs. 1~11 *Aturus hexgonus* sp. nov. 六角阿土水螨, 新种

1. male dorsal 雄螨背面; 2. male venter 雄螨腹面; 3. male lateral 雄螨侧面; 4. IV-L-6 of male 雄螨IV-L-6;  
 5. IV-L-6 of female 雌螨IV-L-6; 6. palp of female 雌螨须肢; 7. palp of male 雄螨须肢; 8. female dorsal 雌螨背面;  
 9. female venter 雌螨腹面; 10. end view of female sorna (setae on gonopore omitted) 雌螨体躯末端观 (省略生殖孔上的刚毛); 11. ejaculatory complex of male 雄螨射精管复合体

Nei Mongol Autonomous Region by JIN Dao-chao. Paratypes 1 ♂, slide 468-2, 3 ♀ ♀, slides 468-3, 468-4 and 468-5, same data as for holotypes.

Remarks: This new species is similar to *Aturus semilineatus* Habeeb 1953<sup>[4,5]</sup>, but differs from the latter by 8 (in female) or more than 8 (in male) pairs of acetabula, bifurcate setae of D2 and L2 in male and of L1 in female, 2 modified heavy setae on the terminal venter of IV-L-4 in male.

### References (参考文献)

- [1] Cook D R. Water mite genera and subgenera. Mem. Amer. Entomol. Inst., 1974, 21: 1~860
- [2] Imamura T. A view of the research on the stygobiontic water mites (Hydrachnellae, Acari) in Japan. Contr. Acar. Japan, 1977. 9~81
- [3] Jin D C. Hydrachnellae-Morphology, Systematics, a Primary Study of Chinese Water Mite Fauna. Guiyang: Guizhou Science and Technology Publishing House, 1987. 1~356
- [4] Habeeb H. North America Hydrachnellae, Acari. I-V. Leaflets Acadian Biology, Grand Falls, New Brunswick, 1953, 1: 1~16
- [5] Imamura T. Two species of *Aturus* (Aturidae, Acari) from Japan. Acta Arachnol., 1961, 17 (2): 34~38

## 阿土水螨亚科及一新种记述

### (蜱螨亚纲: 阿土水螨科)

金道超

(贵州大学昆虫研究所, 贵阳 550025)

摘要: 报道了湿螨总科 Hygrobatidae、阿土水螨科 Aturidae 的中国一新纪录亚科暨属及其一新种, 模式标本保存于贵州大学昆虫研究所。

关键词: 阿土水螨亚科; 阿土水螨属; 新种

中图分类号: S186 文献标识码: A 文章编号: 0454-6296 (2001) 02-0231-04

阿土水螨亚科 subfamily Aturinae Thor 1900, 中国新纪录

该亚科特征除 Cook 1974 之定义外, 其肛孔区转移到背面并成为背板的后部分。

阿土水螨属 genus *Aturus* Kramer 1875, 中国新纪录

六角阿土水螨, 新种 *Aturus hexgonus* sp. nov.

新种略似半线阿土水螨 *A. semilineatus* Habeeb 1953, 但其以两性殖吸盘 8 对或更多、雄螨 D2、L2 和雌螨 D1 为叉毛、雄螨 IV-L-4 腹面的 2 根大毛扁阔并呈特殊形态等特征显著区别于后者。该文据新种首次完整记述了阿土水螨亚科腺毛分布体位及其特点。主要特点为 D1 在背缝上, D2、D3 和 D4 在背板中后部; V1 和 V2 紧密相邻, 雄螨 V4 在生殖域中部背面前缘、邻近背缝, 雌螨 V4 在背缝与膜质生殖孔区衔接处、与背板末端相邻; L2 和 L3 位于背缝上, L4 位于生殖域前端。

正模 ♂, 片号 468-1, 28. VIII. 1996, 内蒙古自治区扎兰屯, 卧牛河 (N48°1', E122°7'), 金道超采。  
1 ♂, 片号 468-2; 3 ♀ ♀, 片号 468-3, 468-4, 468-5, 采集记录同正模。